Deutschmann

your ticket to all buses

Quick Start
EtherCAT TwinCAT V3 from BECKHOFF with Deutschmann UNIGATE® EtherCAT

Deutschmann Automation GmbH & Co. KG
www.deutschmann.de | wiki.deutschmann.de

Disclaimer of liability

We have checked the contents of the document for conformity with the hardware and software described. Nevertheless, we are unable to preclude the possibility of deviations so that we are unable to assume warranty for full compliance. The information given in the publication is, however, reviewed regularly. Necessary amendments are incorporated in the following editions. We would be pleased to receive any improvement proposals which you may have.

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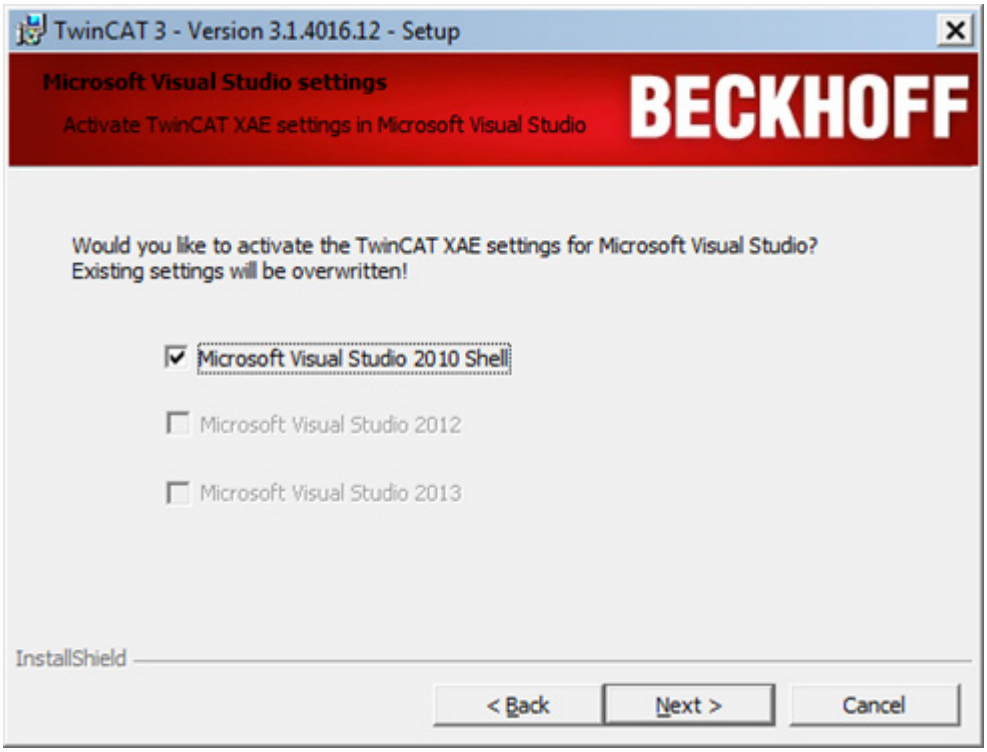
1 Download the TE1000 | TwinCAT 3 software

TwinCAT 3.1 – eXtended Automation Engineering (XAE)

https://www.beckhoff.com/en-en/support/download-finder/software-and-tools/



2 ESI (EtherCAT Slave Information)

After installation, copy the device description file (ESI file) into following folder:

C:\TwinCAT\3.1\Config\Io\EtherCAT

Note: Depending on the ESI file used, the I/O sizes are either fixed or modular (configurable via EtherCAT master). An ESI file with modular I/O sizes was used to create this guide.

2.1 ESI - UNIGATE® CL, CM, CX, EL and MB:

An ESI file can be generated via the WINGATE configuration software if the "Universalscript Deutschmann" loaded in the delivery state is available in the devices.

Note: A sample device description file (ESI file) for which the I/O sizes can be configured via the EtherCAT master can be requested using the support form on the Deutschmann website.

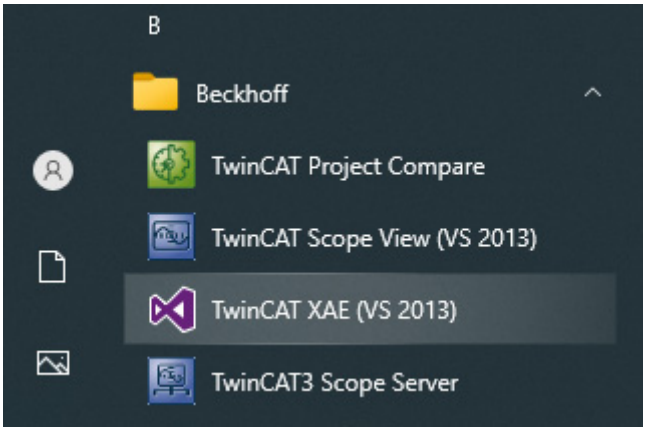
Attention: UNIGATE® CM and EL have been discontinued since 12/2018.

2.2 ESI - UNIGATE® IC and IC2

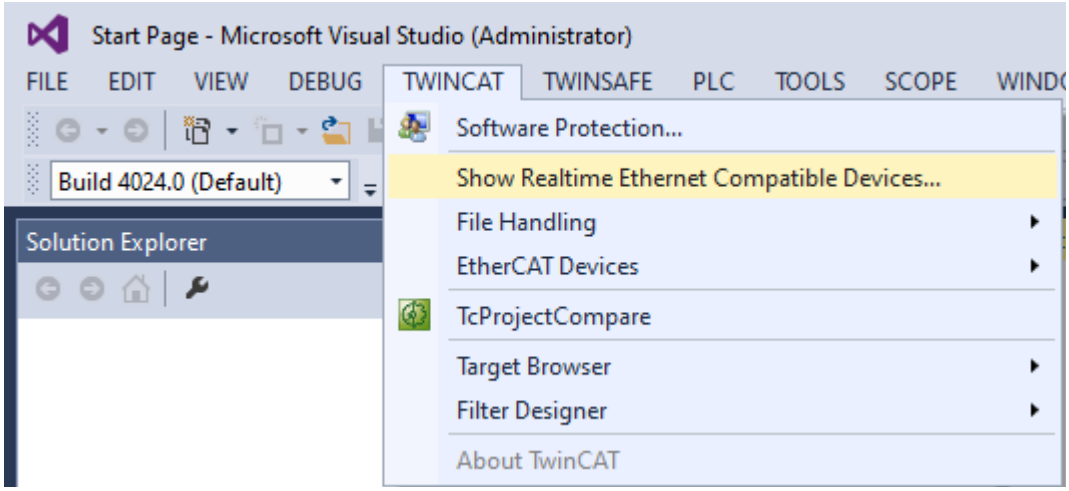
The sample device description file (ESI file) provided can be used as a basis for creating your own device description file. Deutschmann Automation also offers the creation as a service.

Note: The sample device description file (ESI file) is sent once with the first order. Further information regarding the creation of your own device description file can be found in the attached document 'esiQuickStart'.

3 Start TwinCAT V3

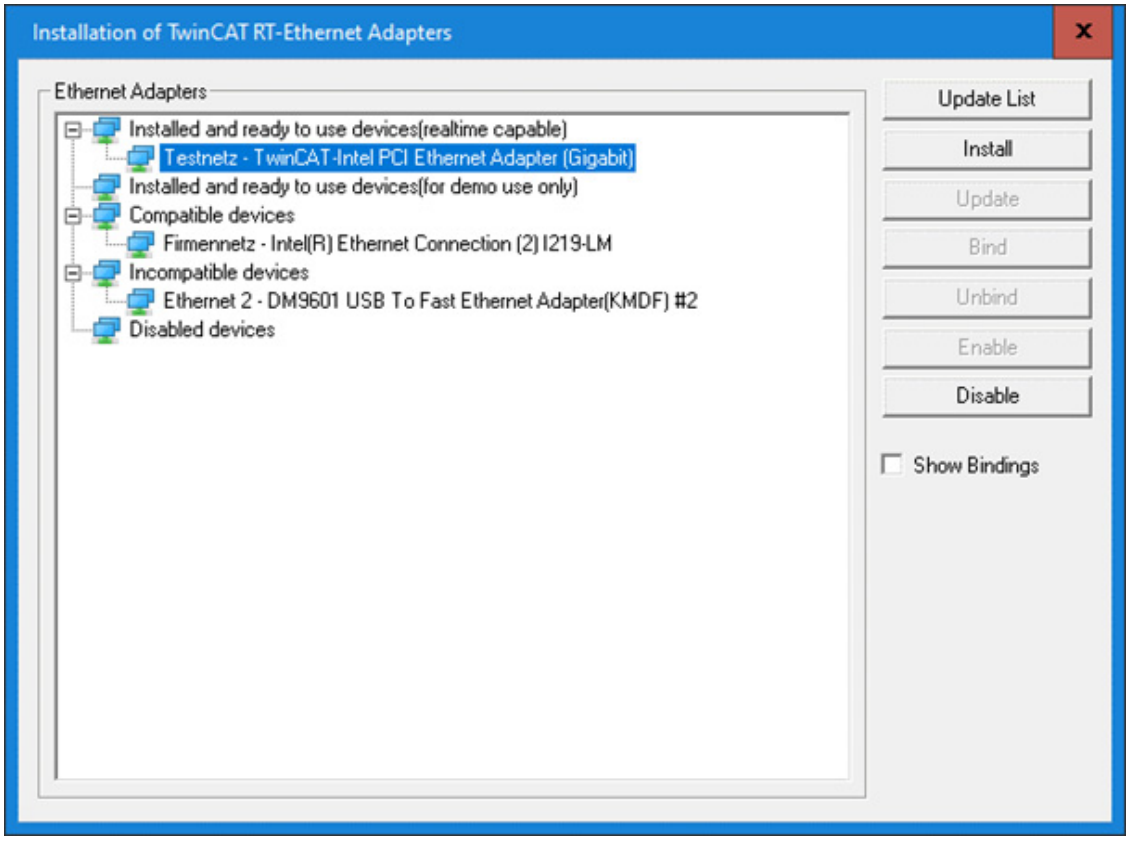


Check if your Ethernet Card is working with the software



If there is a device shown in the subfolder „Installed and ready to use devices“, you can go on. If not, it must be added using the "Install" button.

Note: The devices listed here are examples and may have different names.



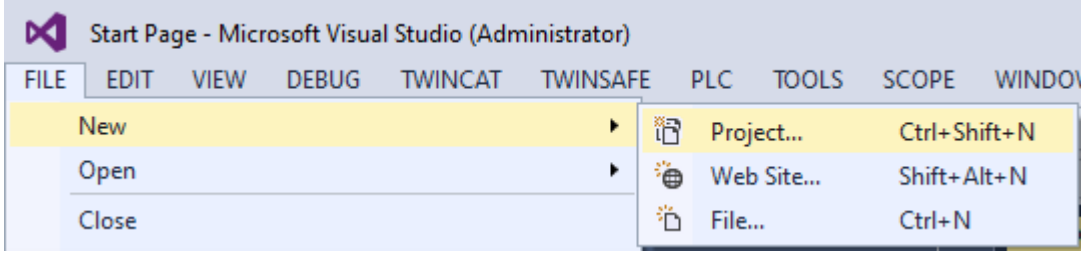
Either the "Universalscript Deutschmann" (not for IC+IC2), the template script for EtherCAT (part of the software Protocol Developer) or a customer-specific script must be loaded in the UNIGATE®.

- Universal script Deutschmann: Among other things, the I/O sizes can be configured via the WINGATE configuration software.
- Template EtherCAT: Initially, 8 bytes I/O are set. These can be changed using the Protocol Developer software. The template is also the perfect basis for creating your own script.
- Custom Script: Function dependent on programming.

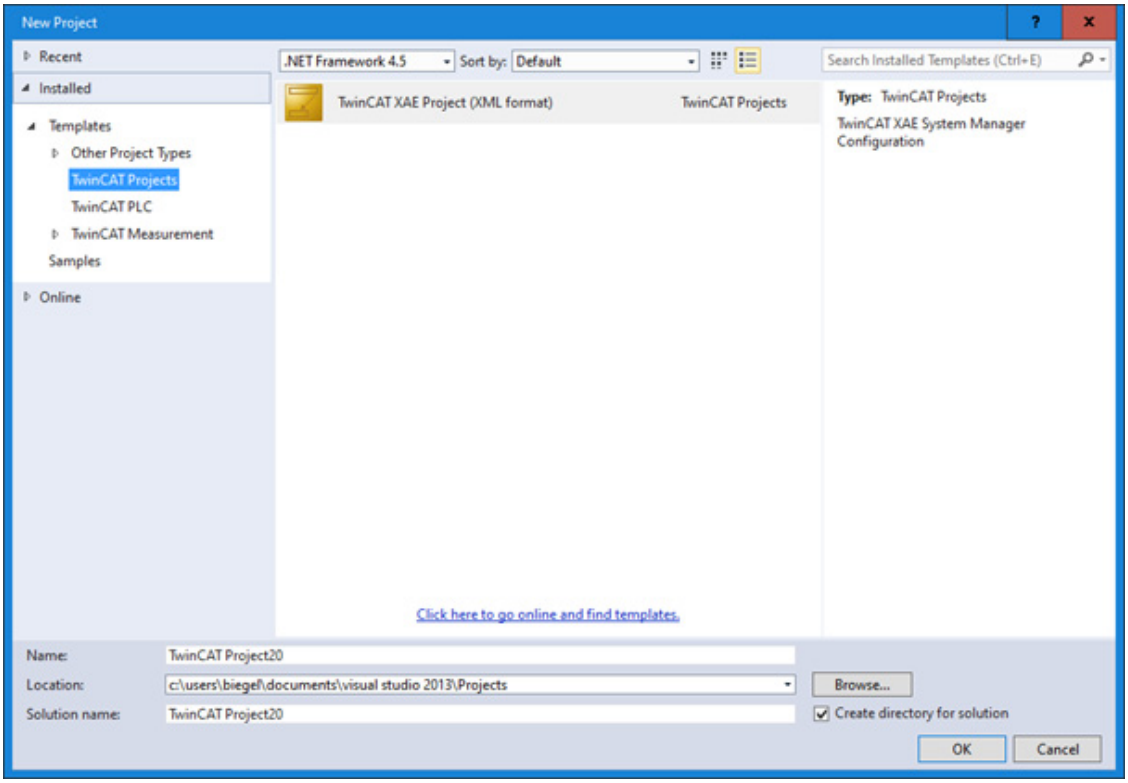
Then the UNIGATE® can be started in data exchange mode.

Note: If the UNIGATE® is started in configuration mode, 8 Byte I/O is set automatically.

Starting a new project.



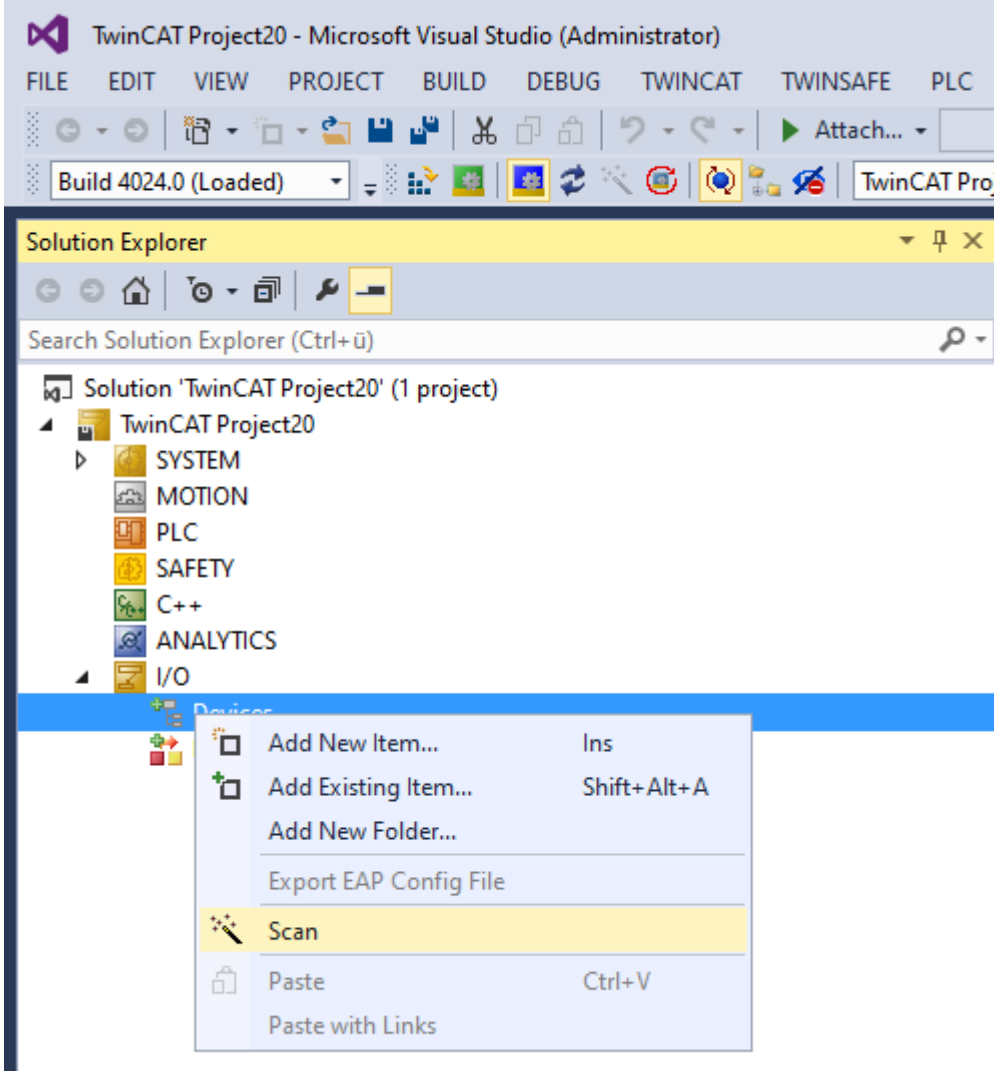
Assign a project name and click „OK“.



Scanning devices

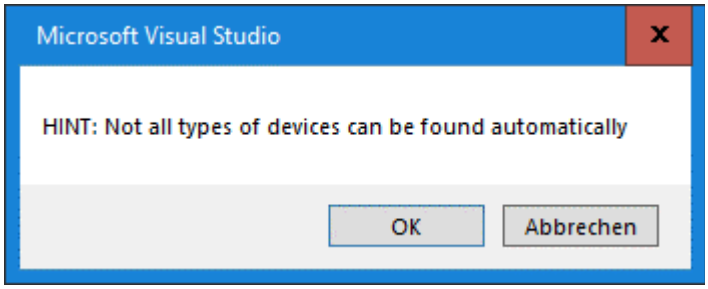
Click right mouse button and select “Scan”. Then click “OK”.

Note: If it is not possible to select “Scan”, please, check whether TwinCAT is started in config mode.

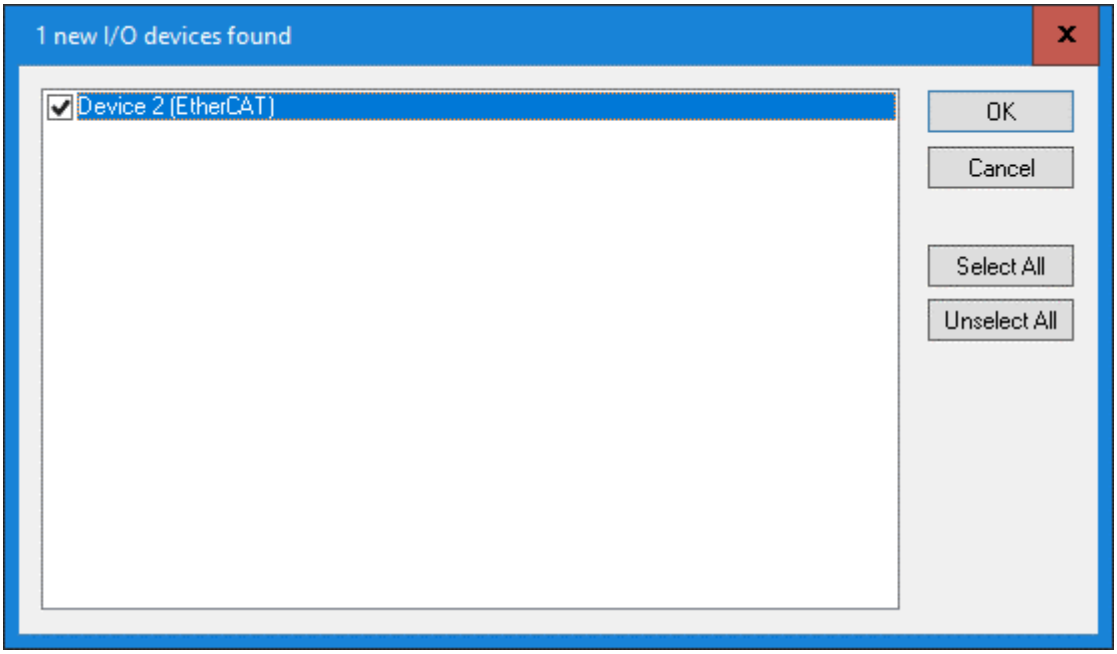


Config mode is indicated by the blue background of the config Icon in the status bar.

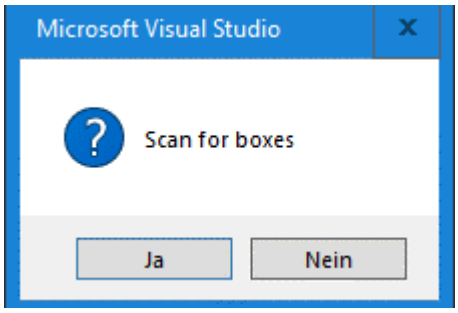
If the config Icon is highlighted in red TwinCAT is not in config mode.



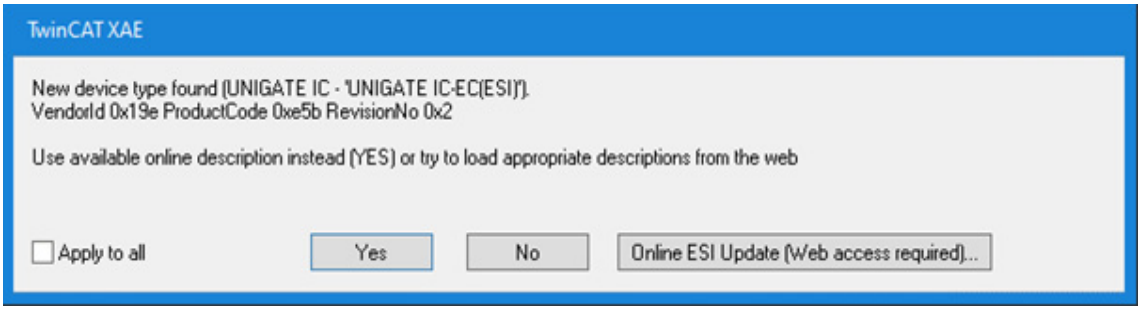
Select device and click „OK“. If no device appears, check the Ethernet connection.



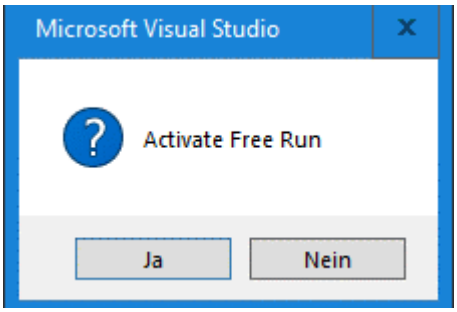
Click „Ja“.



If this window appears, the ESI file does not match the scanned hardware. Click, no and a new Box will be generated. For further instructions see chapter „New device found or mismatch with ESI file“.

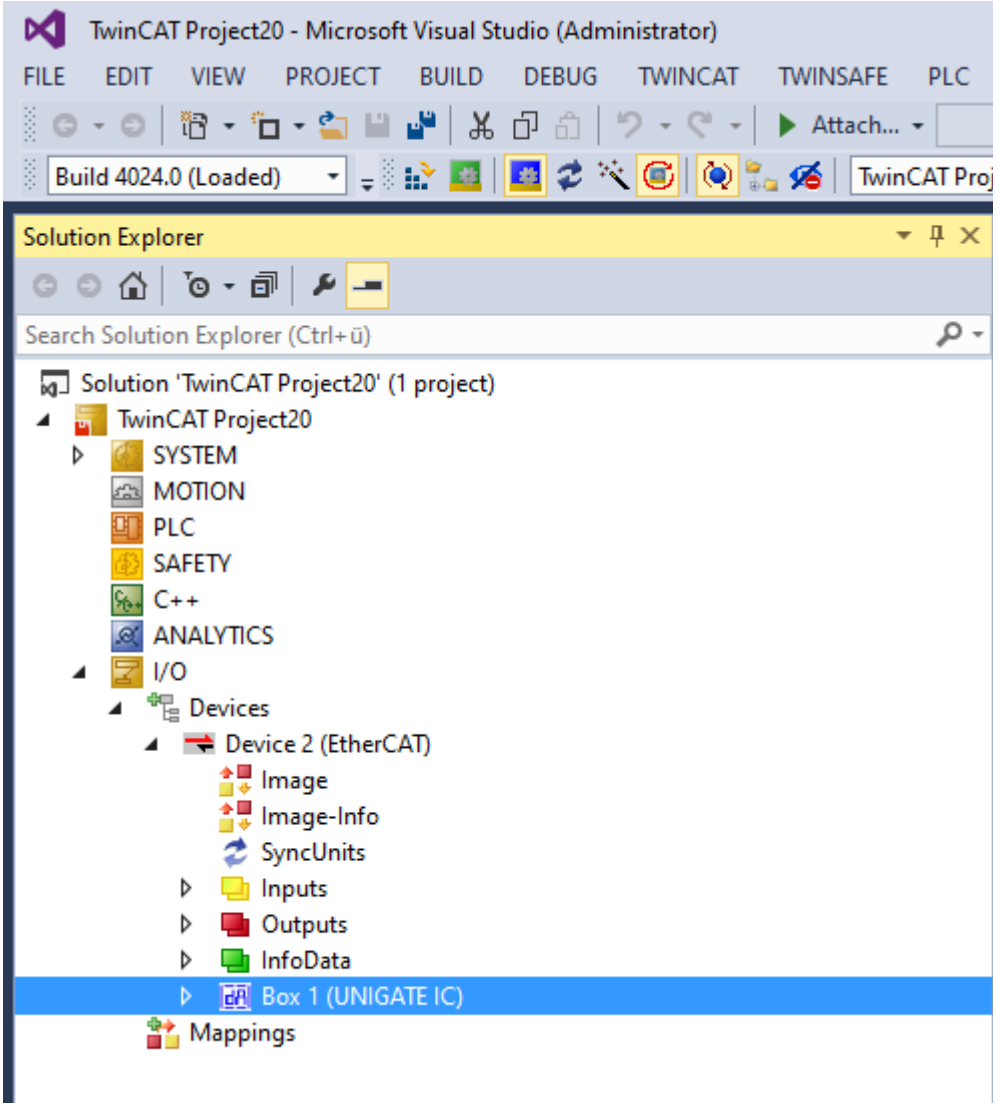


Click „Ja“ .



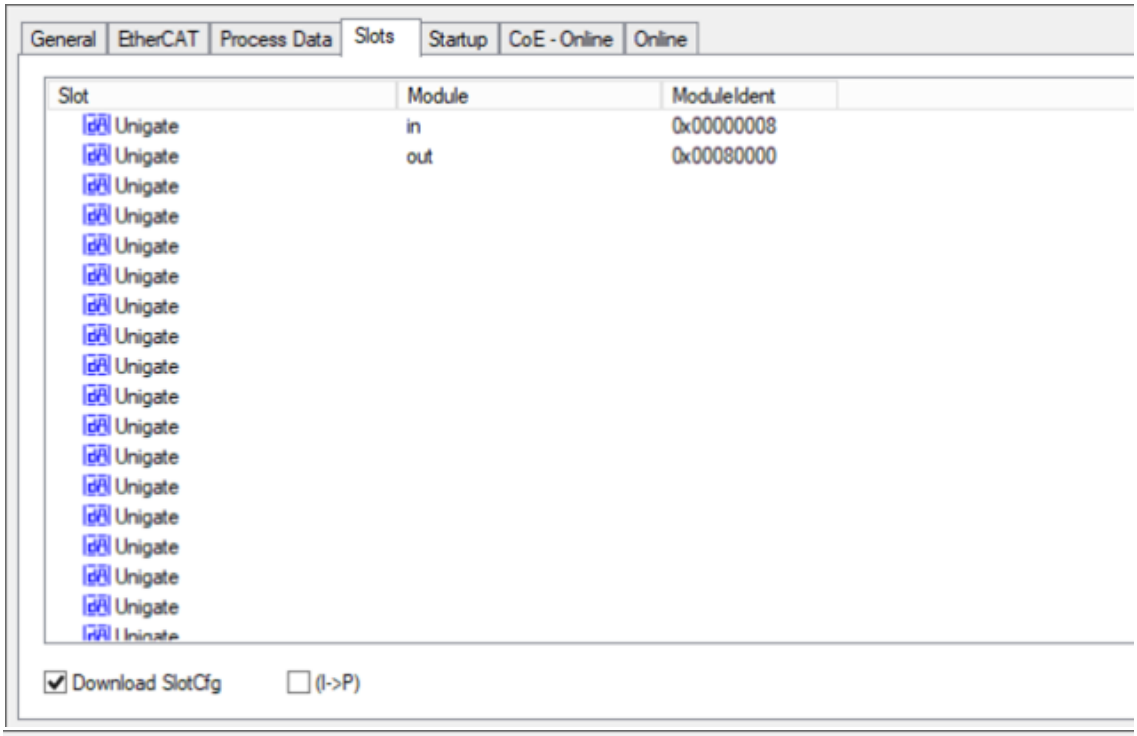
4 Selected device found

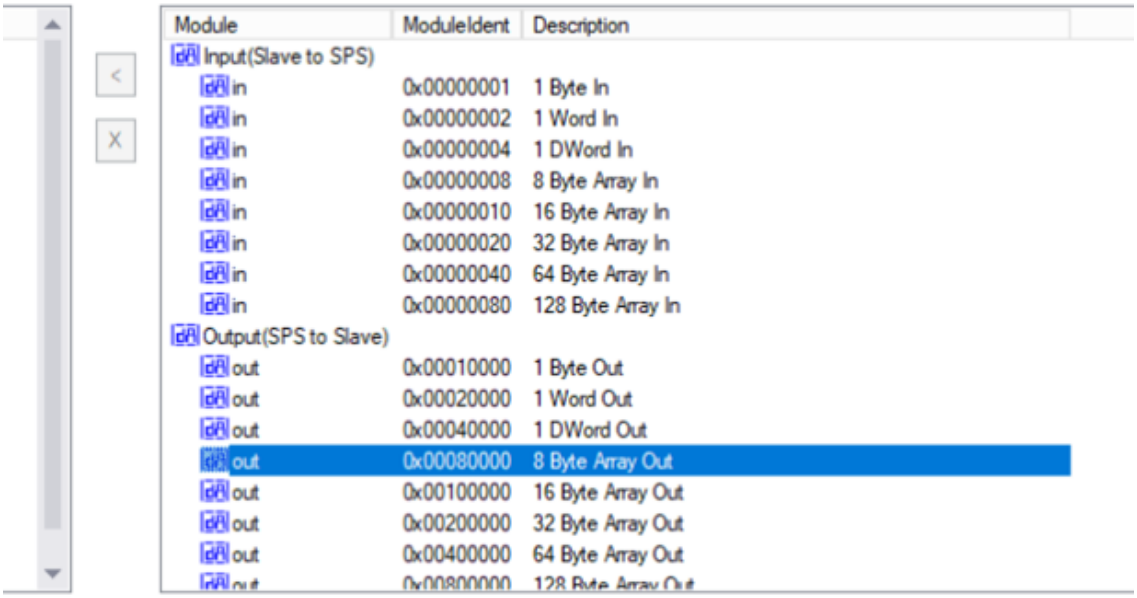
The seleced device was found ➔ UNIGATE® IC.



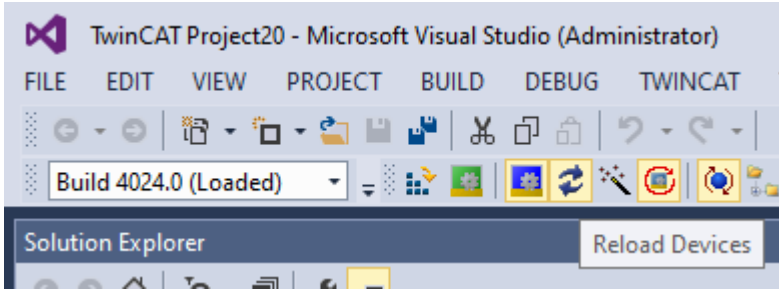
Select the I/O size

Note: The I/O size must be match the setting in the user script.
In the template script, 8 Byte I/O is set. This means, 8 Byte for input and 8 Byte for output must be set via the slots.
E.g. It is possible to use a 1 Byte input module 8 times. Or only one 8 Byte input module. The same applies for output.

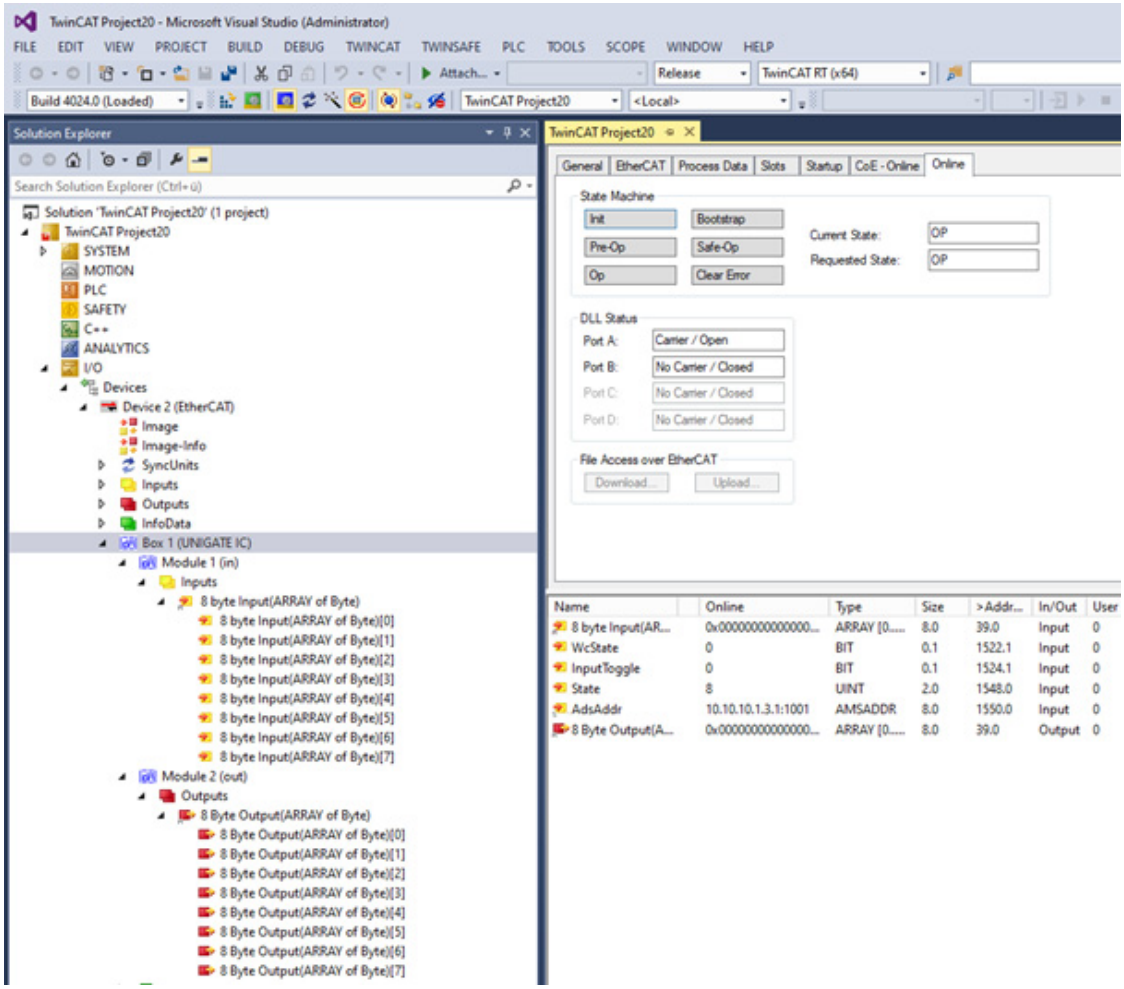




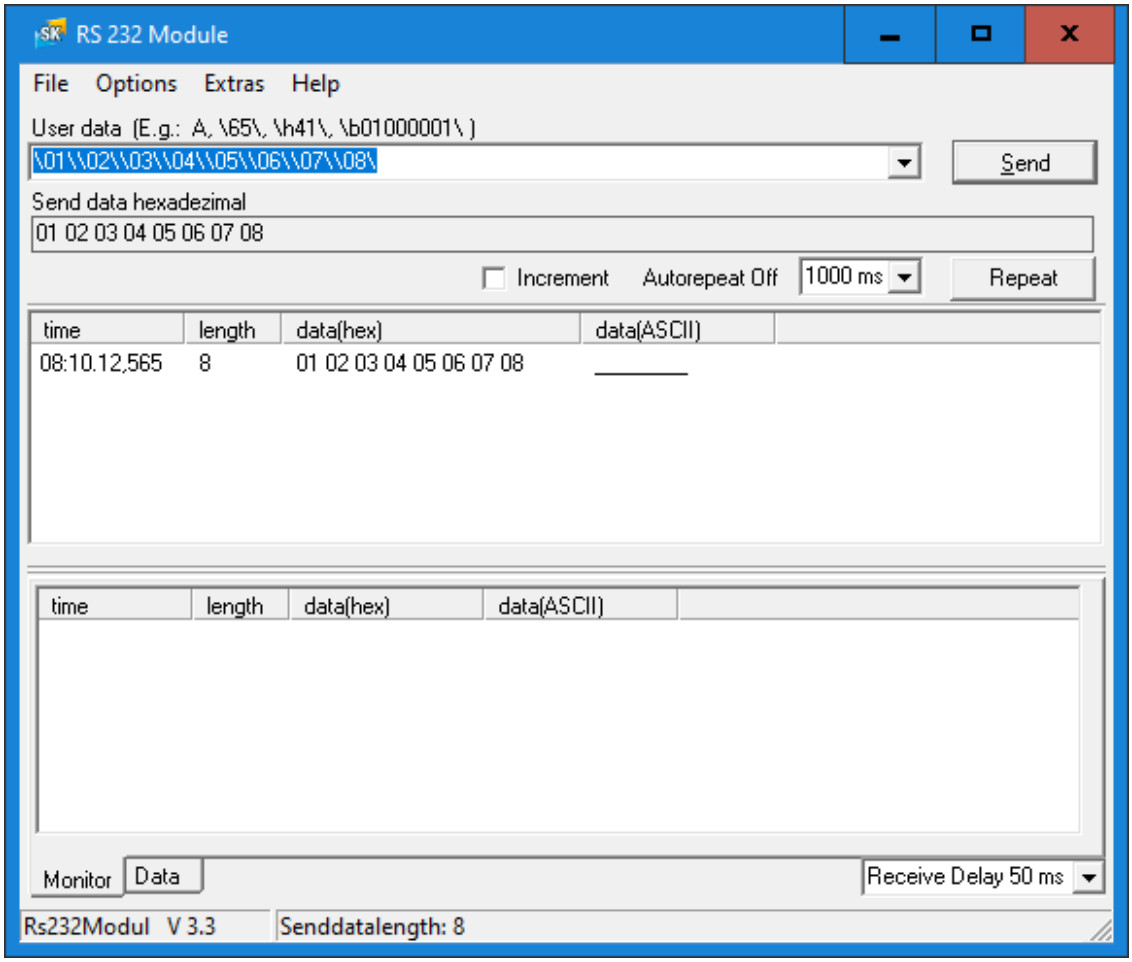
After that, click „Reload Devices“.



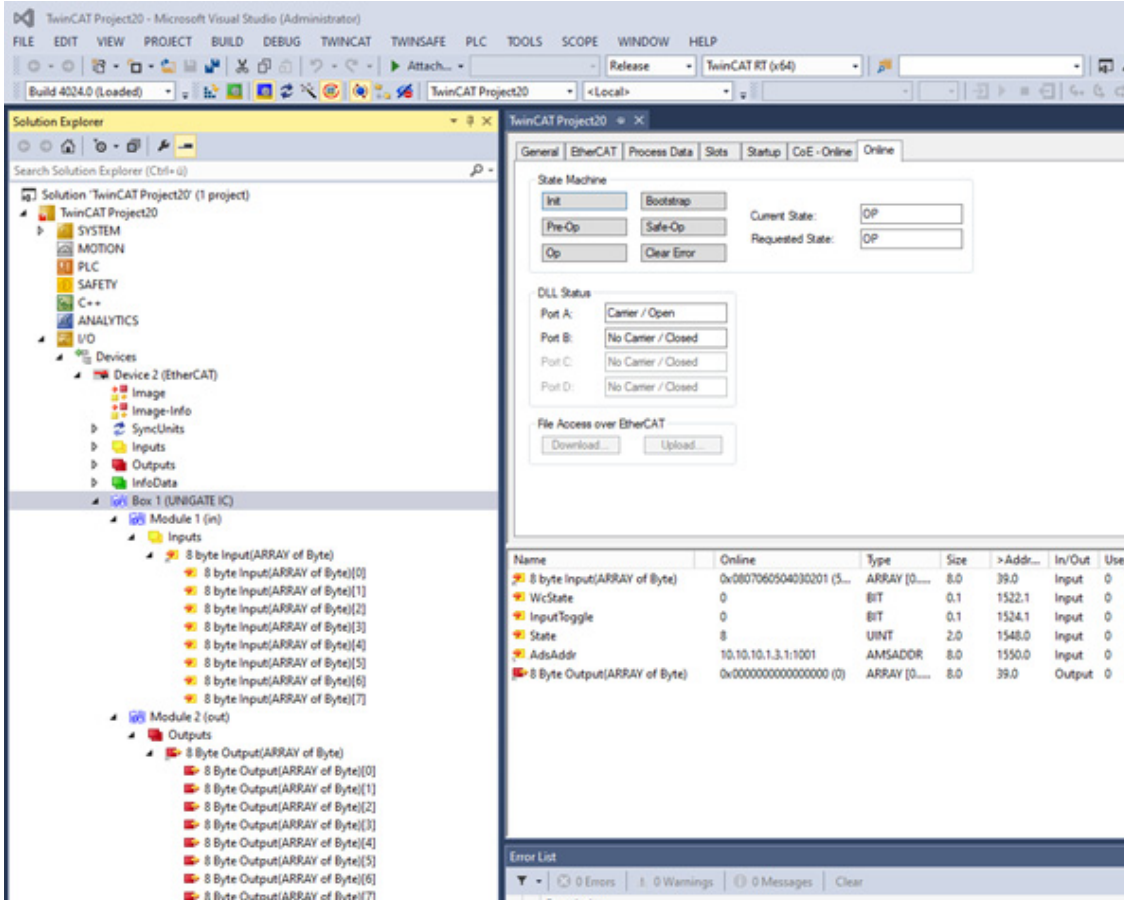
Now the device is in operational mode and the selected I/O sizes are available.



Serial data can be sent to the UNIGATE® UART via the Starter Kit software module RS232.

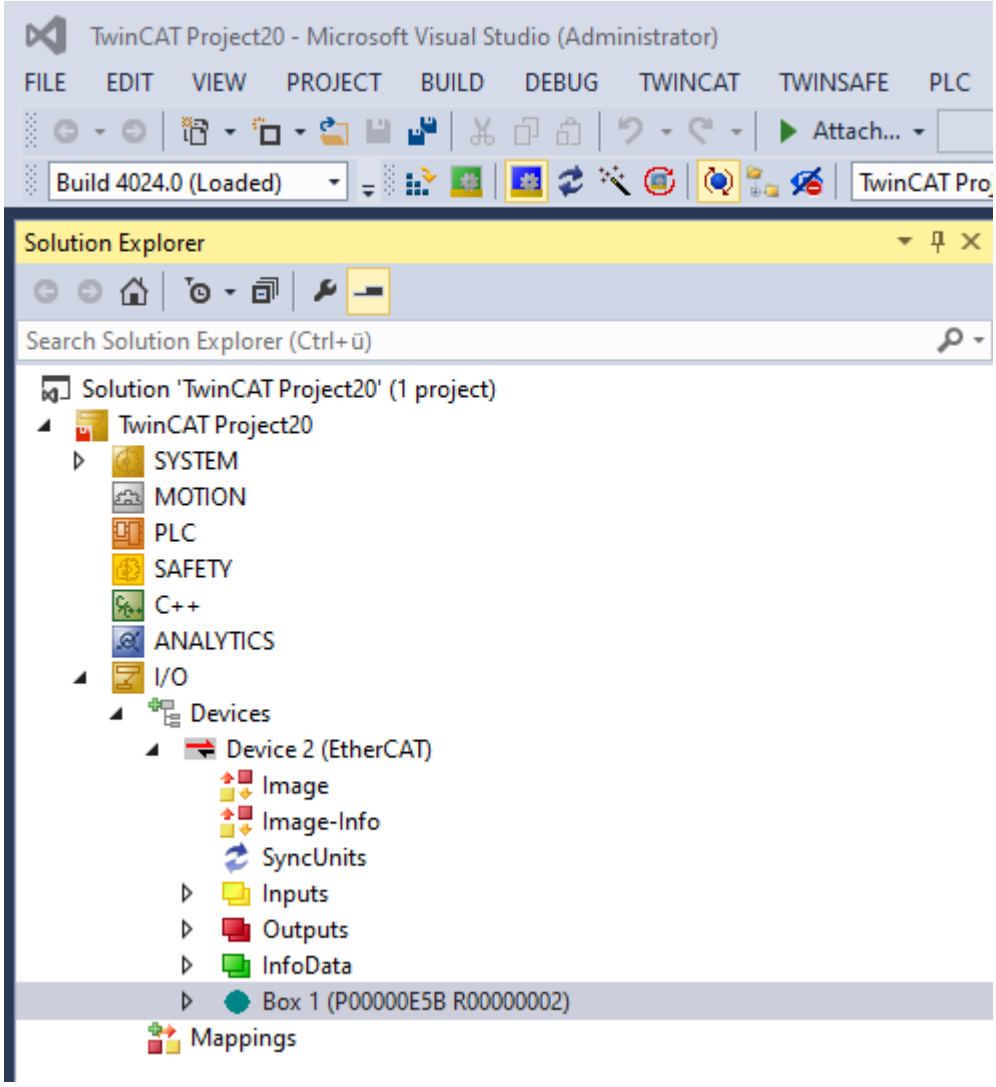


The serial data is displayed in the input data.

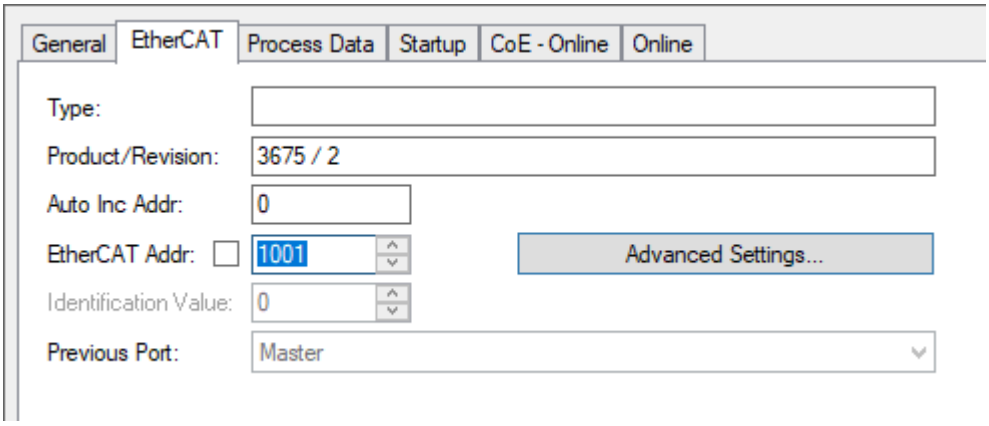


5 New device found or mismatch with ESI file

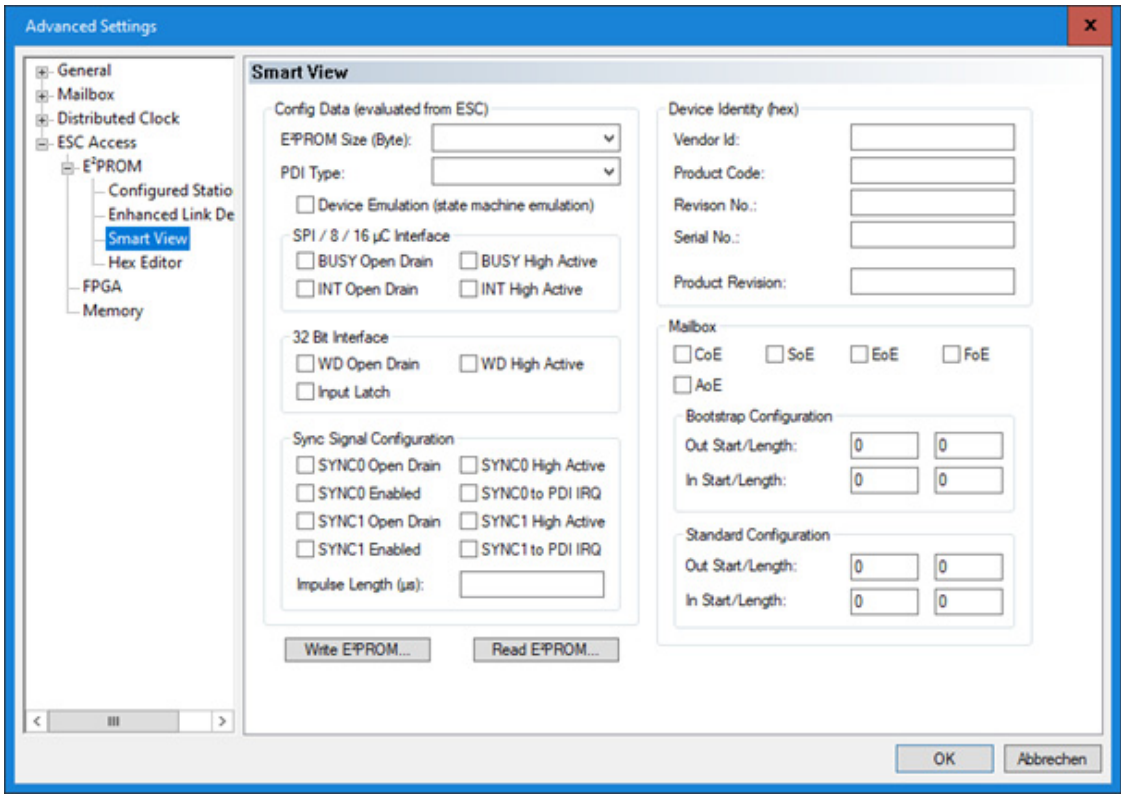
Double click on Box 1 (P00000E5B R00000002).



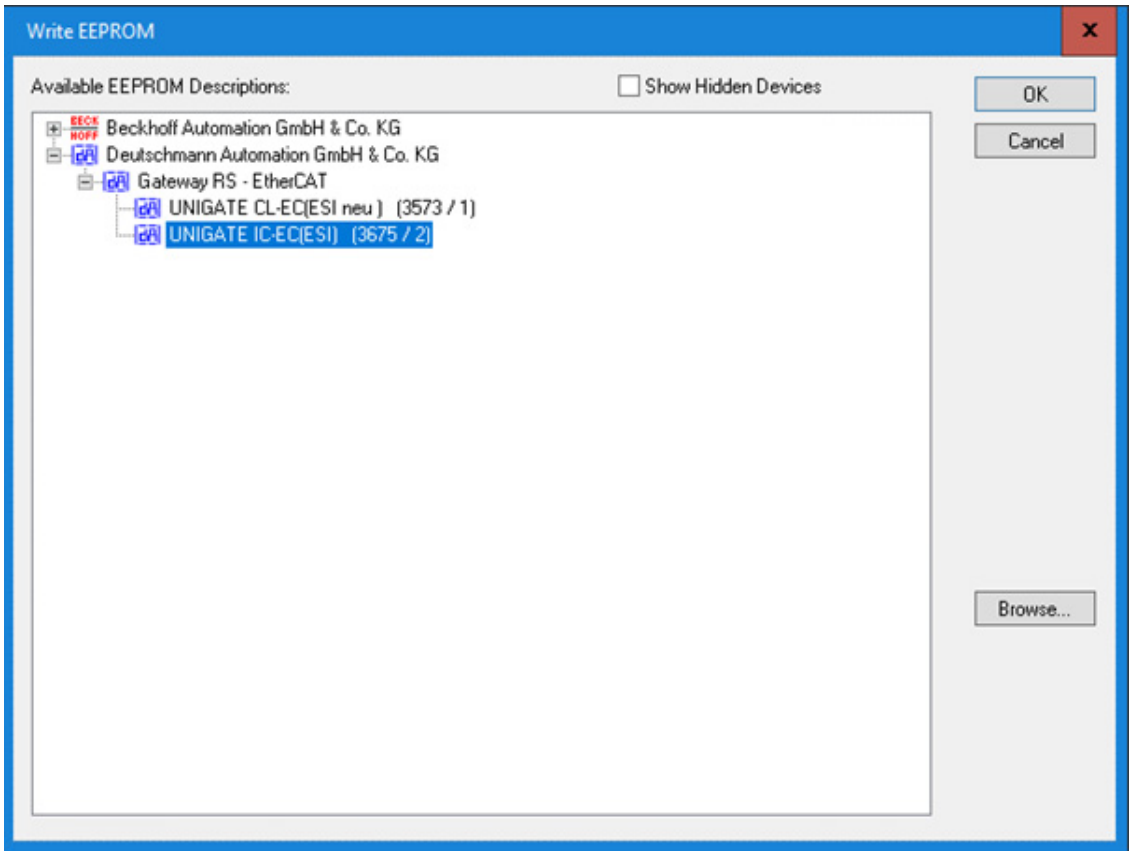
Select „EtherCAT“ and „Advanced Settings...“



Open „Smart View“ and click the button „Write EProm“...

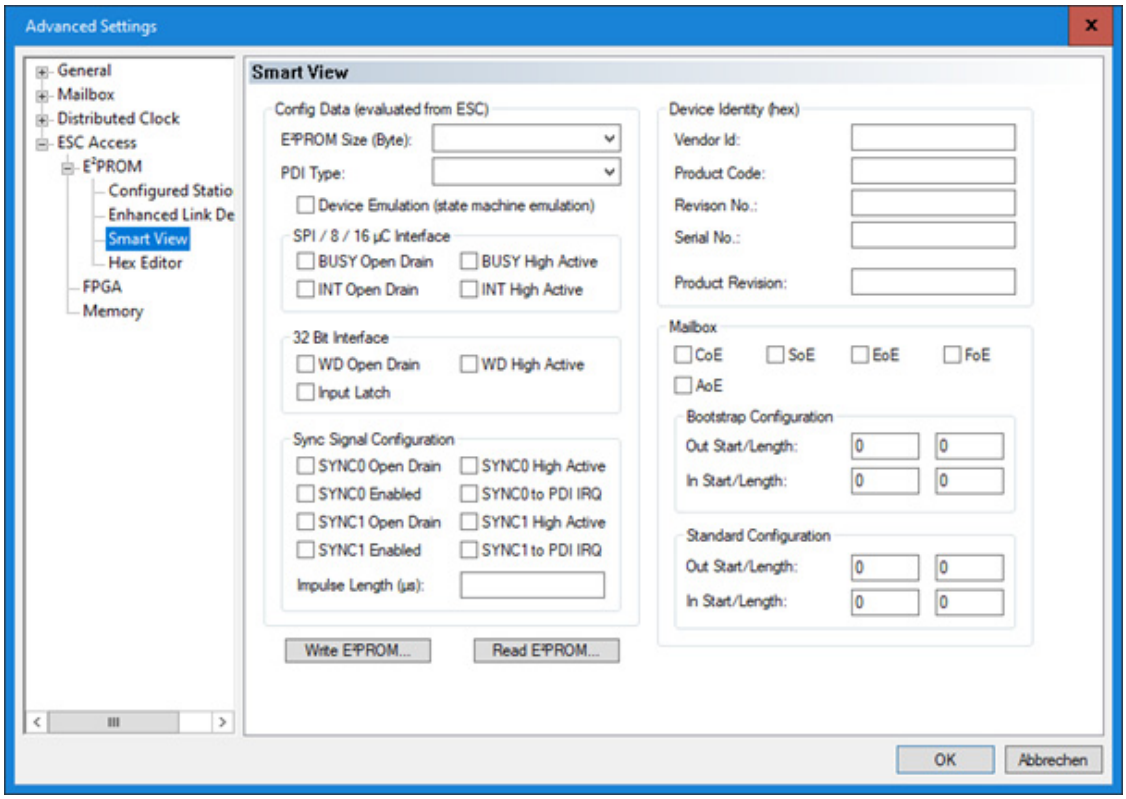


Select the desired ESI file and click OK. The EPROM is rewritten.

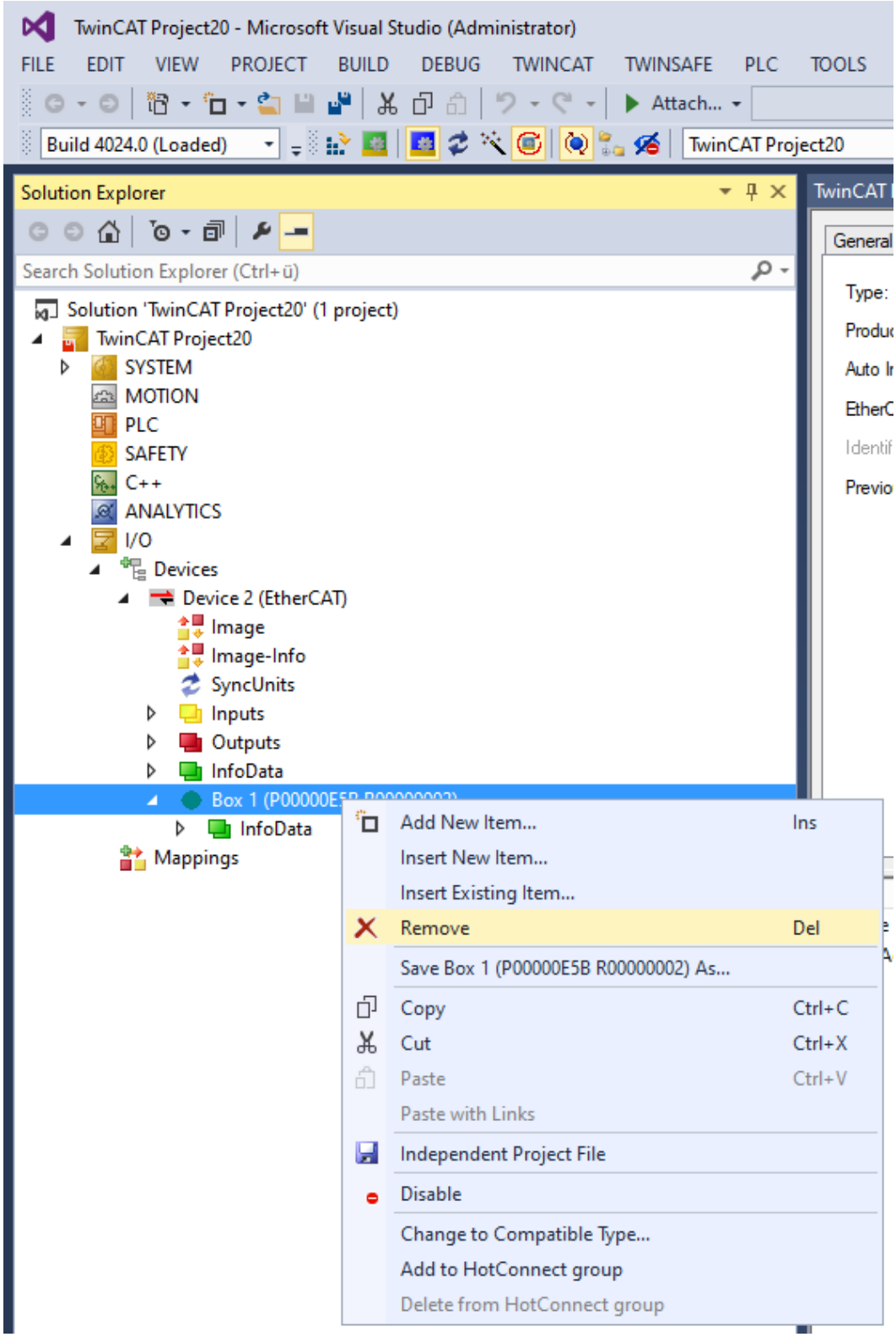


Note: If the file you are looking for is not displayed, the device descriptions must be reloaded. (see chapter 7 for more.)

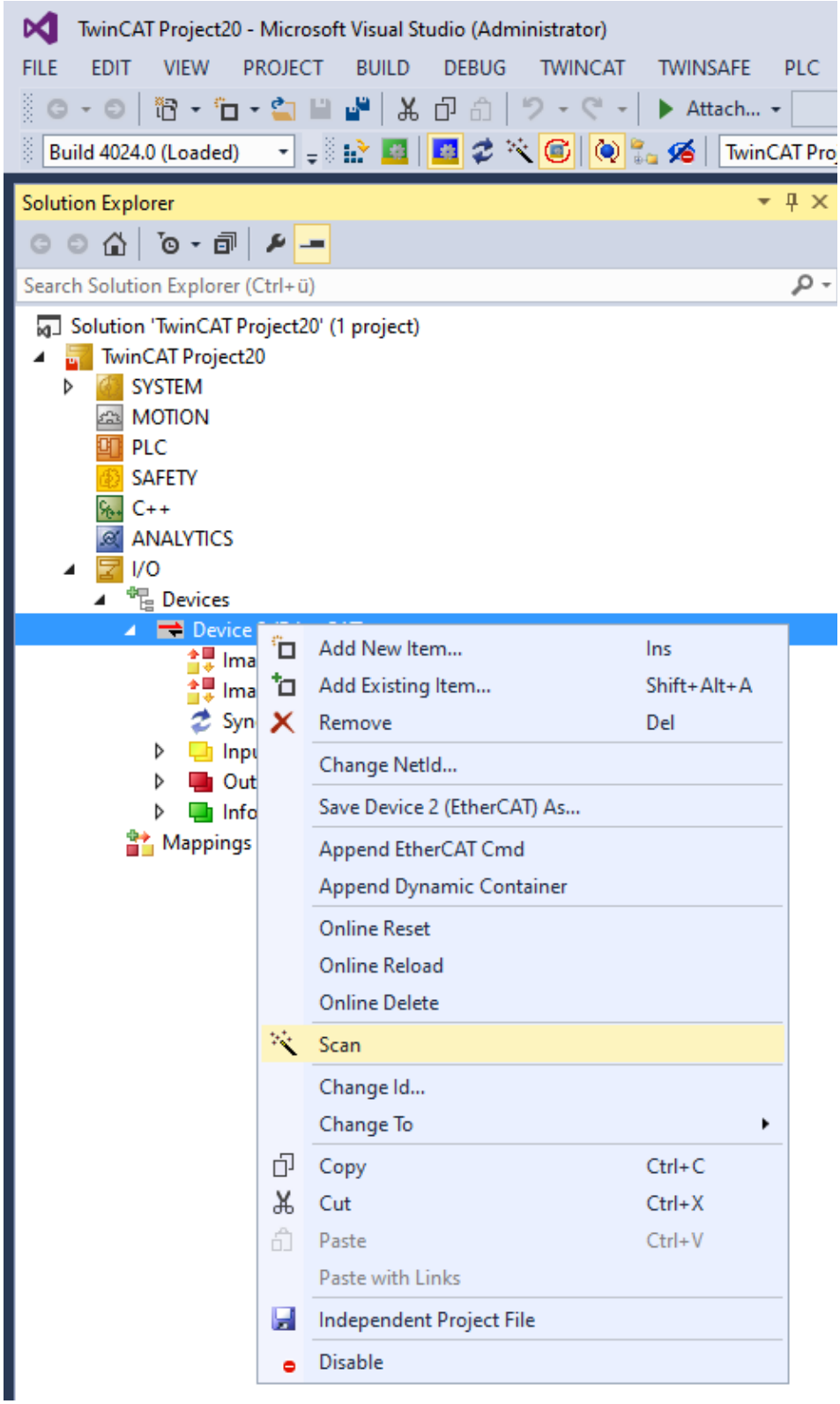
After the description of the EPROM, the advanced settings can be closed with "OK".



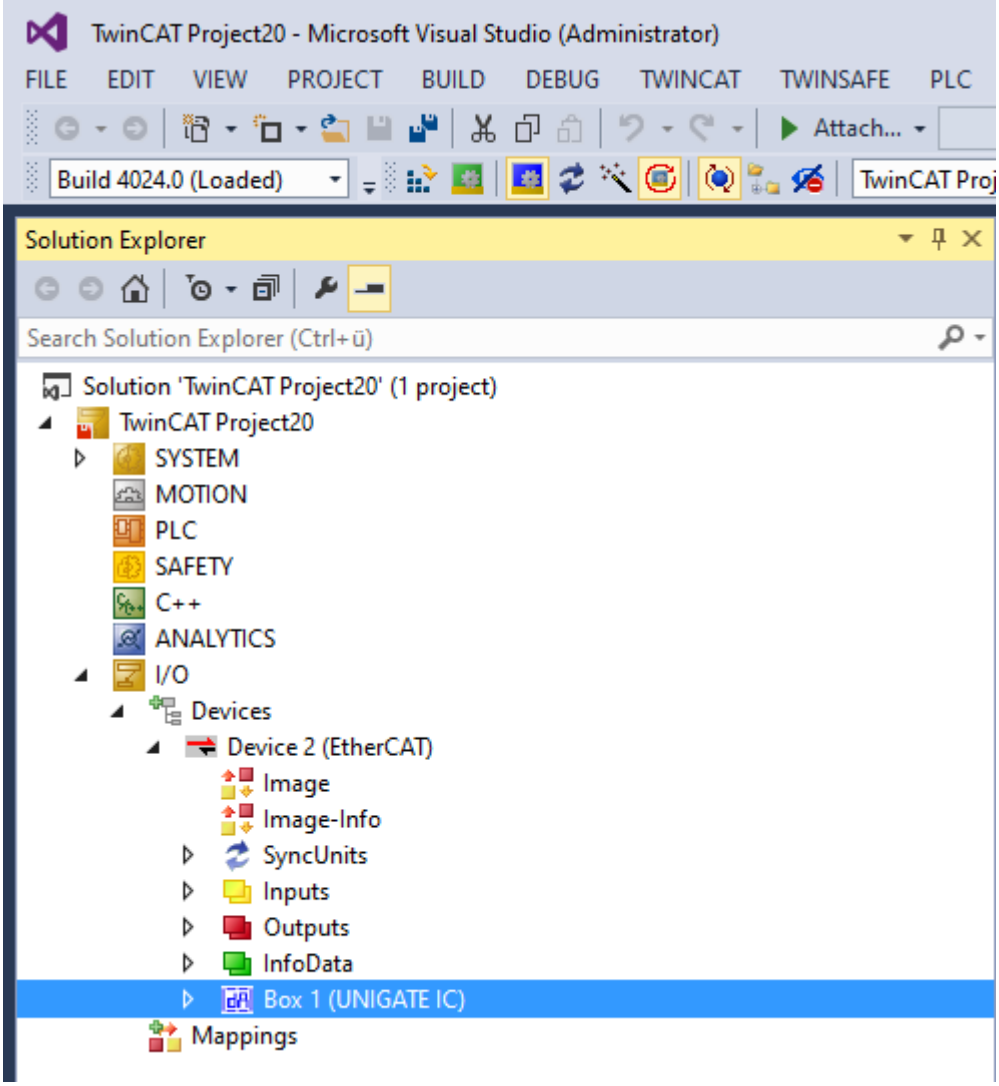
Then remove Box 1



After that, the connected devices must be scanned again.



A new Box 1 (UNIGATE® IC) appears.



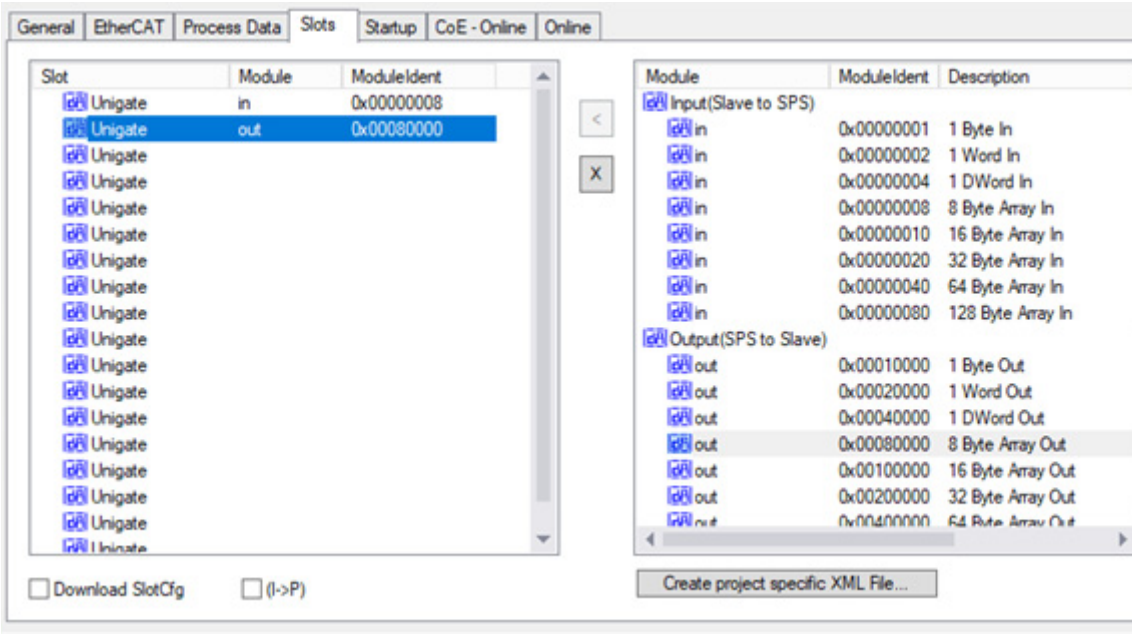
Depending on the ESI file, the sizes of input and output are either permanently stored in the ESI file or can be configured via TwinCAT. If the sizes of input and output are permanently stored in the ESI file, the device should be now in operational mode.

If not, the sizes of input and output must be configured via EtherCAT master. For more see chapter 6.1.

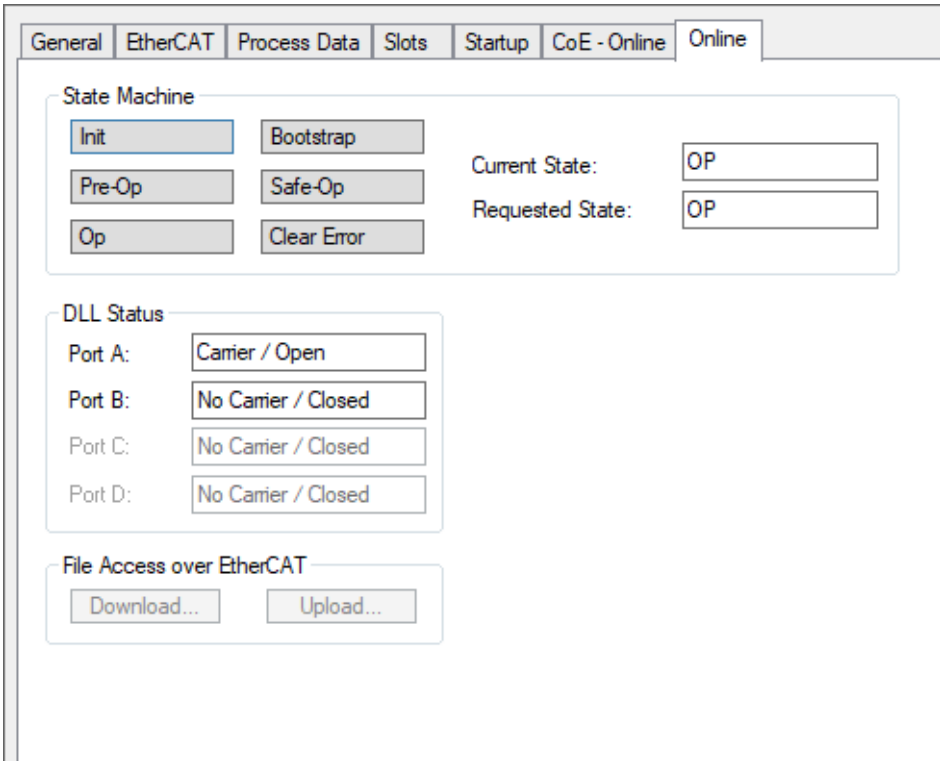
6 Input and Output Modules

6.1 Input and Output modules configured via EtherCAT Master

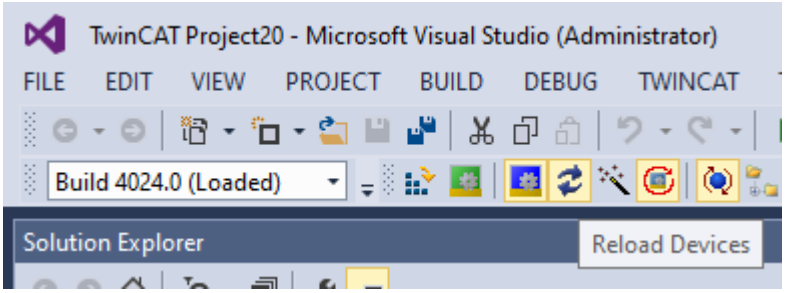
To configure the input and output modules, the "Slots" menu item must be selected.



Now the device is in operational mode

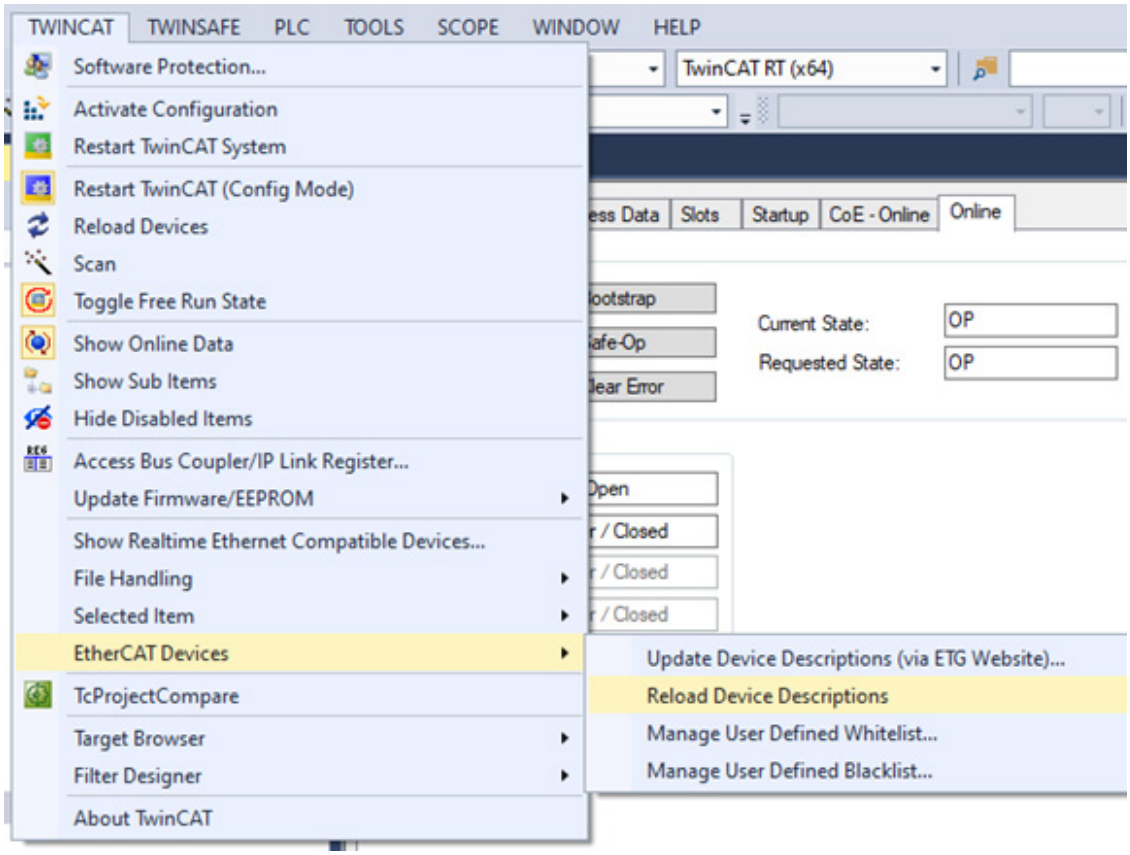


If the I/O size are subsequently changed, the button “Reload Devices” must be clicked.



7 Reload Device Description

A device description file (ESI file) can be reloaded via the menu point “TWINCAT” ➔ “EtherCAT Devices” ➔ “Relaod Device Descriptions”.



Note: Only files that were in the following folder before TwinCAT was started are displayed.

C:\TwinCAT\3.1\Config\Io\EtherCAT

8 Servicing

Should questions arise that are not covered in this manual you can find further information in our

- FAQ/Wiki area on our homepage www.deutschmann.com or directly in our Wiki on www.wiki.deutschmann.de

If your questions are still unanswered please contact us directly.

Please note down the following information before calling:
- Device designation
- Serial number (S/N)
- Article number
- Error number and error description

Your request will be recorded in the Support center and will be processed by our Support Team as quickly as possible (Usually in 1 working day, rarely more than 3 working days.).

Technical Support hours are as follows:
Monday to Thursday from 8 am to midday and from 1 pm to 4 pm, Friday from 8 am to midday (CET).

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Fax Technical Support	+49 6434 9433-44
E-mail Technical Support	support@deutschmann.de

8.1 Returning a device

If you return a device, we require as comprehensive a fault/error description as possible. We require the following information in particular:

- What error number was displayed?
- What is the supply voltage (±0.5 V) with Gateway connected?
- What were you last doing or what last happened on the device (programming, error on power-up, ...)?

The more precise information a fault/error description you provide, the more exactly we will be able to pinpoint the possible causes.

8.2 Downloading PC software

You can download current information and software free of charge from our Internet server.
http://www.deutschmann.com